

CHM 115: Health Science Chemistry I

This course is designed for students in the health sciences. Topics include: a survey of measurements and the metric system; energy and matter; atomic structure and its relationship to chemical bonding; nomenclature; the periodic table; chemical reactivity; the mole and stoichiometric relationships; a consideration of the gas laws; solutions (molarity and % concentration); chemical equilibrium; acids and bases with an emphasis on Bronsted theory, pH, and buffers. Prerequisite: One year of high school biology and one year of high school chemistry. Three lecture hours and three laboratory hours per week. Instructional Support Fee applies. Gen. Ed. Competencies Met: Scientific Reasoning and Discovery.

Course Student Learning Outcomes

1. Classify matter based on physical state and composition and perform heat calculations using specific heat, mass, and change in temperature. 2. Use the correct gas law to perform calculations involving volume, pressure, temperature, and amount of gas. 3. Describe the structure of an atom and write electron configurations of atoms and ions. 4. Write the correct names and chemical formulas of molecular and ionic compounds; employ balanced chemical equations to solve stoichiometric problems. 5. Explain the relationship between reaction rate and chemical equilibrium; write equilibrium constant expressions and carry out calculations of equilibrium concentrations of reactants and products. 6. Perform pH, pOH, $[H^+]$, $[OH^-]$ calculations and solve acid-base titration problems. 7. Make measurements of physical quantities such as mass, volume, length, etc. and analyze data using techniques such as graphing.

Credits: 4

Program: Chemistry